



## TASAR FOR TRIBAL PROSPERITY – AN EXPERIENCE OF BAIF IN PROMOTION OF TASAR SERICULTURE BASED LIVELIHOOD PROMOTION IN MAHARASHTRA

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### Abstract

*Promotion of sustainable livelihood programme for weaker section especially tribals and conservation of natural resources and its judicious utilization offers a huge challenge for any development agency. Over a period of 40 years, BAIF has taken up several activities related to different aspects of natural resource management with sericulture through number of projects in the field of research, extension, training, technology development and demonstrations. BAIF initiated different livelihood programmes in 21 blocks of Chandrapur, Gondia, Gadchiroli districts during 2004, focusing on tribal development through appropriate region specific interventions viz. wadi (Horticulture), improved agriculture, watershed, women empowerment, livestock development, community development and non timber forest produce (NTFP) etc. It was evident that, traditionally the tribal families are involved in some NTFP activities viz. collection of gum, mahua & mahua seeds, honey & bees wax, charoli, aonla, bel, tadi, and herbal plants, etc which are sold by them to local traders in weekly market for cash or barter them for other goods. By considering the potential and coexisting the unique ecosystem, covered with forest and abundant tasar host plantations in Gadchiroli, Gondia and Chandrapur district, offered a great opportunity to introduce highly remunerative NTFP activities like tasar sericulture for tribal families. Tasar sericulture is subsidiary occupation of forest and forest-fringe dwellers and practiced traditionally by Dhivar community. However, Tasar silkworm rearing was unpredictable source of income because rearer uses very crude method of handling silkworms and worms susceptible to various climatic fluctuations. BAIF intervention in promotion of sustainable livelihoods through tasar sericulture with allied activities focused at strengthening traditional activity by appropriate technology interventions.*

**Keywords:** *Tasar, Livelihood, allied activity, vanya, NTFP*

The tribal area in Gadchiorli and Chandrapur represents the typical features of the plateau region of Maharashtra. Endemic poverty, high concentration of Scheduled Tribes, undulating and high dependence on forest-based livelihoods is the key features of this region. Districts are predominantly rural and depict abject poverty. Ultra leftist forces are active in these districts. The livelihoods include a portfolio of farm and forest activities that helps in diversifying economic risks at the household level. Most of the forests in this region have a rich reserve of Tasar host flora and tribal communities have lack the knowledge and skills to rear Tasar silkworm. These districts have been lagging behind on various development fronts especially in the farm sector, which forms the livelihood for a majority of the population. The tribal communities in Gadchiroli are Madia, Pardhan and Gond who belong to the primitive tribal group (PTG), and are predominantly present in these locations.

The market demand for Tasar has been growing at an annual compounded rate of over 12% (as estimated by working group for XI Five Year Plan). This growth in demand itself would create 30,000 additional livelihoods in Tasar sector every year. Clearly then, there is vast scope to enhance livelihood security and reduce poverty by ways of adoption of better technologies and facilitating market-led growth processes.

Traditionally the tribal families are involved in some NTFP activities viz. collection of gum, mahua & mahua seeds, honey & bees wax, charoli, aonla, bel, tadi, and herbal plants, etc which are sold by them to local traders in weekly market for cash or barter them for other goods. Tasar sericulture is subsidiary occupation of forest and forest-fringe dwellers and practiced traditionally by Dhivar community. More than 75% area is covered with forest, rich in *Terminallia tomentosa* plantation.

Realising this potential, BAIF under the National Agriculture Innovation Project – Component 3 initiated tasar based livelihood programme.

### BAIF experience & expertise in sericulture

BAIF (Bhartiya Agro Industries Foundation) Development Research Foundation was established in 1967. It is a non-political, non-government, secular and professionally managed organization. Presently BAIF programme have been reached 4.4 million families spread over 70,000 villages in 16 states with 3500 Livestock development centers, enabling them to engage in sustainable livelihood activities, contributing Rs. 2800 crores (USD520million) to the national GDP. For efficient implementation of these programmes, BAIF have promoted over 10,000 strong People's Organizations mainly self help groups, user groups and their federation, of which 80% are represented by women. While Dairy Husbandry and watershed development and Sericulture programmes are being expanded in many areas. For ensuring food and nutritional security, the agri-horti-forestry (WADI) programme has enabled thousands of tribal families to demonstrate a unique approach of poverty alleviation, while reducing the ill-effects of global warming. All these programmes have been made significant contribution to the millennium development goals.

**BAIF in the past has very successfully innovated many approaches for solving the location specific problems in adopting certain technologies coupled with farmers willingness for effective technology transfer.** Based on earlier experience and learnings, realized that, sericulture intervention blend with integrated approach brings an excellent outcome and create visible impact in the rural area. It was experienced that active participation and involvement of



concerned farming community in various stages of development from planning stage leads to sustainable and replicable development model

### **March towards tribal development**

BAIF initiated different livelihood programmes in 21 blocks of Chandrapur, Gondia, Gadchiroli and Nagpur districts during 2004, focusing on tribal development through appropriate region specific interventions viz. wadi (Horticulture), improved agriculture, watershed, women development, Education, Health and Nutrition, livestock development, community development and non timber forest produce (NTFP) etc.

### **Role of National Agricultural Innovation Project (NAIP) in tribal prosperity**

(NAIP) supported livelihood improvement project has opened a new ray of hope in Tasar based livelihood promotion in Maharashtra, which was a major initiative of Indian Council for Agricultural Research (ICAR), New Delhi with the mission of establishing a system and action-based research consortium for improvement of livelihood in 150 backward districts of country of which 11 districts are in Maharashtra. Under NAIP Component III, BAIF Development Research Foundation, Pune has been working as a Consortium Leader to implement the Sustainable Rural Livelihood Security Project (SRLS) in five backward districts of Maharashtra viz., Yeotmal, Gadchiroli, Chandrapur, Ahmednagar and Nandurbar. This project enables to develop a holistic approach for promoting sustainable livelihood to distress forest dwellers of Maharashtra through integration of appropriate innovative approaches.

### **Socio-economical status of Gadchiroli and Chadrapur region**

It has been recorded that, the lowest literacy was observed in Ettapalli, Gadchiorli with 40% men and 23% women and 96% of the families earns less than Rs. 20000/ per annum. It was interesting to note that, the percentage of migration in Gadchiroli was only 2%, this might be due to abundant availability of Tendu leaves (*Diospyros Malanoxylon*) and Mahuva (*Madhuca indica*) which are main source of earning and fletch attractive remuneration. As far as livestock is concern, Gadchiorli region though having large herd composition with he-buffaloes and piggery but did not proved major income generating activity. However, agricultural production is seriously constrained by lack of awareness about technologies, low inputs, unreliable weather, and the effects of deforestation on land productivity.

### **Problem Analysis**

Forest dependent livelihoods of these tribal families have been adversely affected due to heavy deforestation and dwindling forest produce. Certain other challenges faced are low soil cover, increased frequency of shifting cultivation, heavy soil erosion, high input costs, problems of pests and diseases and limited credit availability. Majority of the families depend upon rain fed agriculture. It was also documented that, the road connectivity and transportation are severely disturbed during rainy season for 4-5 months.

Besides this, the prevailing social practices of high expenditure for family functions like weddings and the intermittent medical expenses for one or the other member of the family further stretch the available financial resources to the limit and force the families to avail credit at exorbitant interest rates from the unscrupulous moneylenders. Gadchiroli is badly affected by this menace and many families are being forced into this form of protest due to financial plight and extremist influence.

Mostly tribal people live in the forest or in the fringe areas though, agriculture is the primary livelihood of these people. However considering the low yields of paddy in the rain fed areas, people look for additional livelihood opportunities. Tasar rearing starts after the agriculture season i.e., September, when the opportunity cost of labour remains low. The rearers traditionally rear Tasar silkworms in the nearby forest areas. On an average, the entire family of the rearers spends 80-90 days in silkworm rearing in the forest land.

### **Opportunities**

Since BAIF strongly believes in working with people rather than working to the people through holistic approach by adopting region specific technologies. It is thus confirmed that the choice of the livelihood for most farming families has been narrowed down considerably and there is a need to widen this base to alleviate the distress situation. Hence efforts has been made to introduce alternate seasonal livelihood activities such as lac, tasar, water chestnut & fish cultivation, rock bee honey harvesting etc. have shown promising results. Tribals engage in farming activity for only 4-6 months in year. After rainy season most of tribals engage in collection of NTFP, hunting and migration for forest department work. It was identified that, the tribal communities particularly youths have shown keen interest in learning new activities and supplement their agriculture income. Involvement of tribal families in one or more activity during non farming months ensures steady source of income, employment round the year. It also helps conserve forest, prevent migration and improve quality of life.

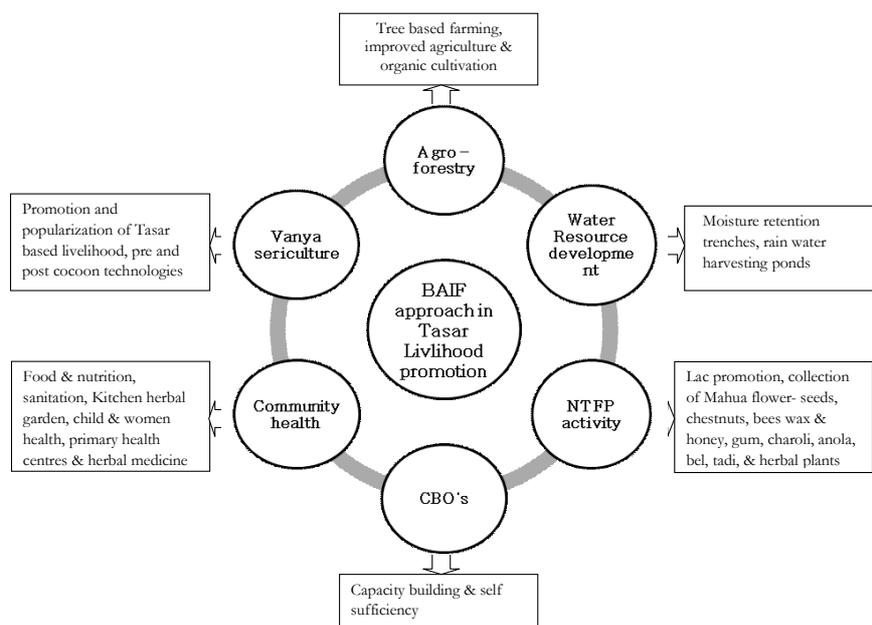
### **BAIF interventions under NAIP in promotion of Tasar based livelihoods**

Keeping the following objectives in mind the tasar intervention under NAIP was introduced;

- To increase annual income of tribal families with the help of tasar cultivation
- To strengthen community institutions (CBO'S)
- To conserve and regenerate natural resources
- To build capacity and enterprises development in Tasar sericulture.
- Development & adoption of innovative integrated approaches in promotion of Tasar enterprises.
- Enhance village overall productivity, stop migration, employment generation and prosperity creation in the villages.
- Improvement in social status, food security and improvement in health due to increased economy in the village.
- Sustainable utilization of natural resources without harming other components.



Fig.1. BAIF- Region and season specific approach in livelihood promotion



**An integrated multidisciplinary approach was adapted in promotion of Tasar intervention for desire outcome-**

1. To ensure food and nutrition security

In order to ensure food and nutrition security improved agriculture and vegetable cultivation in the backyard was introduced to provide required food security round the year resulting in arresting the malnutrition in the tribal populace.

2. To promote health security

Tribal women were trained to raise level of awareness and different health programme sponsored by Government agencies.

3. Focus on women members of participating family in disseminating knowledge and skill up gradation.

Woman's are the back bone of the tribal community and plays a pivotal role in both household and economic activities; still they are having socially lower status. Organizing women into SHGs and building capacity through training in order to make them driving force of the village. Training and capacity building was key component in successful implementation of project activities.

4. Plans for increasing access of credit to women farmers and women groups.

The credit would be mobilized from SHG savings for routine activities & activities like seed production; group were motivated to approach the financial institutions to mobilize credit for working capital requirements.

5. Income generation and quality of life

Most of the farmers conduct tasar rearing occasionally without keeping mind on commercial scale. Usually average income

from tasar was recorded in the range of Rs. 4000 to 5000/. Initiatives under NAIP, tried to build all the required linkages so as to make available critical inputs and services available at the door steps, would ensure taking up tasar silkworm rearing on a regular basis and adoption of technologies for assured and enhanced productivity and income.

**Process adopted in promotion of Tasar livelihood programme :**

Selection of location - Village meeting - Brain storming - Conduct survey of host plant availability - Participatory Rural Appraisal -Selection of participants and baseline - SHG formation and Tasar kosa group - Farmers to farmer interaction - Training and exposure visits - Field demonstration on tasar silkworm rearing technology - Distribution of rearing inputs - Expert visit/monitoring – cocoon harvesting and cocoon grading - Selection of seed cocoon for dfl production and post cocoon processes - marketing and forward and backward linkages

During the year 2008-2009 to 2012-13, BAIF initiated tasar sericulture activity in Chandrapur and Gadchiroli region. The potential of tasar sericulture in core villages of NAIP cluster was lowest compare to other areas. Therefore, consistent efforts were made to identify potential villages where there is maximum coverage of natural host plantation for tasar activity. Initially the villagers have very rudimentary knowledge of tasar sericulture. Hence serious efforts were made to convince tribals through various methodology viz training, capacity building demonstration, exposures, and formation of activity groups, scientific rearing of silkworms, host plantation utilization and management, seed production, post cocoon processes, value addition, natural resource management and marketing linkage etc.

### Training, Exposure and capacity building

Training and exposure events were part and parcel of promotion activity. The training includes field demonstration of tasar chawki management, host plantation management, pest and predator control measures, disease control measures; cocoon harvesting, cocoon processing and preservation followed by exposure visits to regional research institutes and BAIF central research Station Urulikanchan, Pune. Interaction with experts and progressive farmers play a pivotal role in changing participants mind sets and developing confidence. During training technical aspects like leaf : Dfls ratio, plantation management, risk involved in late age silkworm rearing, corrective and preventive measures to avoid disease incidences, disease monitoring, and entrepreneurship opportunity in tasar sericulture etc were emphasised.

### Youth involvement in Tasar seed multiplication activity

The tribal communities particularly youths have shown keen interest in learning new activities and supplement their agriculture income. Involvement of tribal families in one or more activity during non farming months ensures steady source of income round the year. It also helps conserve forest, prevent migration and improve quality of life.

To tap youth potential, BAIF identified potential youths in the project area and trained in tasar seed production i.e. grainage activity. The best cocoon harvester and motivated literate farmers are selected for seed multiplication activity in consultation with Kosa group. Selected youth undergo grainage training which includes selection of seed cocoons, seed cocoon storage, moth emergence, moth coupling, egg production, mother moth examination for disease detection etc. Each grainure will earn an amount of Rs. 30000-40000 per grainage cycle in year for the duration of 10-15 days.

Fig. 2 Village youth involved in grainage activity



Seed cocoon arranged in grainage.



Tasar mother moth examination

### Capacity building of women in promotion of post cocoon activity

The potential member preferably women member self help group who may involve in tasar silkworm rearing, and seed multiplication are selected in consultation with kosa group and trained in post cocoon processes like reeling, spinning and matka spinning by experts and sericulture experts from research institutions. The cocoons provided by kosa group for post cocoons processing on job basis. The end product ie raw silk would e marketed through Tasar Vikas Samithi.

Fig. 3 Women involvement in tasar post cocoon activity



Matka Spinning (by using Earthen pot)



Spinning on paddle cum motorised machine



Women operating tasar reeling machines

### Outcome of Tasar intervention

The consistent efforts resulted in increased incremental annual income of Rs. 8000- 10000/- per crop and Rs. 2000 – 4000/- additional income through allied activities like vegetable cultivation was recorded. It was also proved that, due to BAIF innovative approach in order to holistic development of the participating family, several initiatives like water resource development for agriculture practices providing improved seeds, package of practices, field demonstrations etc were supported participants in increase in their income level. An increased of 20-50 % in agriculture production was recorded through utilisation of existing water bodies with participating families. Moreover interventions in the project created affection towards their land and improve in the biodiversity and conservation of natural resources. Incremental incomes through other activities do not only sustain would definitely increase due to capacity utilization, improvement in quality due to increased skill levels. Further, the costs of production were come down and increased earnings due to technology intervention and capacity building. Also due to linkages amongst the activity groups dependency on others will come down which reduce the incidental expenditure to take up various activities.

Particulars	2008-2009	2009-2010	2010-2011	2011-2012
Implementation Area	Chandrapur & Gadchiroli	Chandrapur & Gadchiroli	Gadchiroli & Gondhia	Gadchiroli
Total Number of villages involve	17	12	26	21
Participants	87	106	201	266
DFL reared	7600	1747	32500	40328
Total cocoon production	100017	396060	740154	722080
Production of Disease free tasar silkworm seeds from private granure by trained village youth	-----	11000 dfls	14000dfls	12000 dfls



### Learning from experience

The success of tasar crop is mainly depends on in time supply of quality seeds

Essential of intensive monitoring and timely technical guidance.

Strict watch and ward during rearing to control pest and predators

Scientific management of tasar host plantation for effective utilization

Need to focus on existing and missing value chain activities

Identify untapped opportunities and constraints

Need to develop a business plan for the value chain activities in tasar.

Need for establishment of block plantation particularly nucleus and seed crop rearing

### Impact recorded

Augment the need of quality disease free layings by project participants

Improve in the cocoon productivity land fertility

Create sustainable livelihoods for resource poor families, especially small landholder and landless.

Migration for food and search of job reduced with availability off remunerative employment.

The model created in the project attracted govt. planning circle and political leader in order to replicate the model in other potential area.

By visualizing the success from tasar rearing, participants willingly initiated block plantation in their available land.

Employment and income generation through Tasar based livelihood has created awareness & willingness to accept technology among neighbouring villagers.

### Benefits beyond Project Participants

Check Soil erosion and Improve in soil fertility.

Rainwater percolation leads in better water retention in natural ponds

Increase in tree density & diversity improves biodiversity

Host plantation contributes in carbon sequestration and earn carbon credits

Increase in soil microbial diversity of different microbial taxa by tasar silkworm rearing activity

### Thrust area and future need for development.

The current state of affairs in tasar sector in the State warrant attention to improve infrastructure support in seed multiplication, promoting cultivation of host plants as block

economic plantations, effective utilisation of existing resources/infrastructure, extension support for effective dissemination of technologies/improved package of practices for cultivation, rearing of silkworms, upgrading skill levels of the farmers to undertake sericulture activities for income generation, generating adequate trained manpower with technical knowledge and motivational skills, revamping departmental machineries for implementation of development initiatives and their monitoring, coordinating with line Departments, directing efforts for privatization and emphasizing the development of entrepreneurship in tasar silk sector, with the help of Community Based Organizations and NGOs.

### Future Sustainability and Scaling-up strategies

Tasar culture is an age old practice in the project area of the rural poor specially the Scheduled Tribes. The assured availability of quality commercial seed, improved technologies and the means for its adoption provided under the project. Organization of participants and different stakeholders into manageable groups, SHGs, TVS, and integrating them into Producers Organizations would strengthen the development of the industry. Establishment of required infrastructure within the project area, capacity building through training programmes and study tours, establishment of credit linkages with financial institutions helps in sustainability.

### Conclusion

BAIF intervention in promotion of sustainable livelihoods through tasar sericulture with allied activities focused at strengthening traditional activity by appropriate technology interventions. This has enabled to make 'vanya' sericulture enterprise come within the reach of poor tribals in order to stop distress migration, rejuvenating their degraded natural recourses and offering them a way out of their poverty and bring prosperity. Judicious use of natural resources and conservation without harming other components in the nature was successfully demonstrated in the project.

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